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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/494,063    01/28/00    PELEKHATY

V    292

CIENA Corporation  
Legal Department  
1201 Winterson Road  
Linthicum MD 21090

MM91/0620

EXAMINER

KNAUSS, S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED:

06/20/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/494,063

Applicant(s)

PELEKHATY ET AL.

Examiner

Scott A Knauss

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-3,5-8,10-12,14,15,22 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,147,341 to Lemaire et al.

4. Regarding claims 1-3,5-8,10,12 and 22, Lemaire discloses a temperature compensating device for fiber gratings with all the limitations set forth in the claims in figure 1, including a base (16) integrally formed from a first material, in contact with the internal surfaces of a first and second arm to form fulcrum points, fulcrum points positioned in accordance with the equation of claims 6 and 12 (fig. 7, column 7, line 1), the first and second spaced arms extending upwardly (24,18), a strut (14) between the first and second arms, having a lesser coefficient of thermal expansion than the base, that may be made from Invar (column 4, lines 24-32), and an optical fiber with a Bragg grating (column 1, line 32), affixed using solder or epoxy (column 3, line 63).

5. Regarding claims 11,14 and 15, Lemaire discloses the use of an arm with a hinge (fig 1, #32) pivots in a circular direction (fig 3, column 5, lines 25-29)

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6. Regarding claim 23, Lemaire discloses a temperature compensating device with a strut having a low coefficient of thermal expansion (column 4, lines 30-33) and an arm with a second coefficient of thermal expansion coupled to an optical fiber, with the arm configured to induce strain on an optical fiber to compensate for variations in a Bragg grating. (abstract).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors.. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 4, 9, 13,16-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemaire.

10. Lemaire discloses a temperature compensating device with all the limitations set forth in the claims as stated above, except for the use of welding to affix a fiber to the arms, a base including BeCu or 316-SS, forming a Bragg grating in between the first and second arms, an arm that extends inwardly and upwardly relative to a second arm, and alternately heating and cooling a grating package to adjust a Bragg wavelength.

11. Regarding claim 4, such materials are well known, and since there is no stated criticality for the use of BeCu or 316-SS, the use of such materials would be an obvious design choice.

12. Regarding claim 9, Lemaire fails to specify the use of welding to attach optical fibers to the arms. Nevertheless, Lemaire does state that any mechanical or metallurgical attachment means may be used (column 3, lines 60-67). Therefore it would have been obvious to one of ordinary skill in the art to fasten the optical fiber using a weld, since such methods of attachment are well known.

13. Regarding claim 13, Lemaire fails to specify adjusting an initial positive bias strain. However, Lemaire discloses adjusting the rigidity of a joint to adjust the strain on a fiber grating (column 5, lines 29-33), and pre-straining a fiber grating to fine tune a grating wavelength using an adjustment mechanism using any known means to impart strain on a grating. (column 4, lines 53-63, column 5, lines 3-10). Therefore it would have been obvious to one of ordinary skill in the art to adjust an initial bias strain by varying a fulcrum point.

14. Regarding claim 19, Lemaire fails to specify writing a Bragg grating into an optical fiber held between two arms.

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15. Nevertheless, since there is no stated criticality for forming a Bragg grating in between two arms, it would have been an obvious design choice to form a Bragg grating after a fiber has been placed between the two arms rather than before the fiber is inserted.

16. Regarding claim 21, Lemaire fails to specify a method of adjusting a Bragg wavelength by alternately heating and cooling a part of the grating package.

17. Nevertheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made that repetitively heating a cooling such a package would cause the wavelength sensitivity of the the grating to change. It would be desirable to tune a grating to specific wavelength.

18. Regarding claims 16-18, Lemaire fails to specify a first arm extending inwardly and upwardly relative to the top of a second arm.

19. Nevertheless, such a configuration would be an obvious design choice, since there is no stated criticality in the disclosure. It would be obvious that the pivoting arm disclosed by Lemaire in figure 1 could take different shapes.

20. Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemaire et al. in view of U.S. Patent No. 5,841,920 to Lemaire et al.

21. Lemaire discloses a temperature compensating device with all the limitations set forth in the claims as stated above, but does not disclose assembling the device at a temperature above the intended use temperature of the device.

22. Lemaire, on the other hand, discloses a similar temperature compensating device that is assembled at the highest temperature at which the device is intended to

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operate (column 4, lines 24-27), to assure that the device will compensate for all temperatures below that level.

23. Since Lemaire and Lemaire are both from the same field of endeavor, the purpose disclosed by Lemaire would have been recognized in the pertinent art of Lemaire.

24. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to assemble the temperature compensating device at the highest intended operating temperature to enable the device to compensate for all temperatures within the intended range of use for the device.

### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

26. U.S. Patent No. 6,181,851 to Pan et al. and U.S. Patent No. 6,175,674 to Lin disclose temperature compensated grating packages similar to the one disclosed in the present invention.

U.S. Patent Nos. 5,694,503 to Fleming et al., 6,148,128 to Jin et al., 5,987,200 to Fleming et al. and 6,101,301 to Engelberth et al. disclose alternate temperature compensating grating packages.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-6 Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss

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sak  
June 14, 2001



**HEMANG SANGHAVI**  
**PRIMARY EXAMINER**